cent. of manganese, 6 per cent. of iron, 6 per cent. of silica and 0.14 to 0.20 per cent. of phosphorus. The manganiferous iron ore of the district, as shown by the average of the analyses of about 300 tons shipped recently, contains about 15 per cent. of manganese, 20 per cent. of iron, 30 per cent. of insoluble material and 0.17 per cent. of phosphorus. Practically all the ore produced in the district is shipped to furnaces at Birmingham, Ala., for the manufacture of ferromanganese, spiegeleisen and manganiferous pig iron.

The irregularity of the occurrence of the ores, the complex geologic structure, and the scarcity of outcrops in much of the district make it extremely difficult to use the geologic conditions as a guide in exploration and development and hazardous to predict the probable occurrence of ore in any locality or to do much more than to guess at the reserves of ore. Fortunately, however, the district has been worked for many years, either for manganese ore or for other minerals, and has been rather thoroughly explored, so that there is some basis for an estimate of the reserves. The statement seems to be warranted that the district probably still contains at least 100,000 tons of minable high-grade manganese ore and perhaps 250,000 to 300,000 tons of manganiferous iron ore—sufficient to last for many years unless the rate of production is greatly increased.

BRITISH ELECTRICAL INDUSTRIES AFTER THE WAR

IN the general survey with which the report of the British Departmental Committee on the electrical trades is introduced, it is urged, as we learn from the *Journal* of the Society of Arts, that the national importance of those trades has never been realized either by the government or the general public. Through the achievements of Faraday, Wheatstone, Kelvin, Swan, Hopkinson, and many others, Great Britain was first in electrical enterprise, and should have retained her preeminence; but manufacturers were hampered while Parliament and local authorities debated how the distribution and use of electricity might be prevented from infringing "conventional conceptions of public privileges and vested interests." Consequently foreign manufacturers were enabled, both in their own and other markets to gain a hold which they have never lost. The approximate annual value before the war of the total products of electrical plant, mains, and appliances in this country and Germany is set out in the following table:

	Great Britain, £	Germany, £
Total electrical products.	22,500,000	60,000,000
Exports	7,500,000	15,000,000
Imports	2,933,000	631,000
Consumption of home-made machinery	15,000,000	45,000,000

Moreover, of the £22,500,000 manufactured here, a large proportion was produced by concerns under foreign control, and in the case of "British" exports a proportion consisted of foreign manufactures reshipped as British goods! Apart from legislative obstacles, Great Britain, it must be remembered, had attained much prosperity and technical efficiency in her use of steam, and therefore her manufacturers had less inducement than their rivals in foreign countries to adopt electrical driving. Another factor retarding our electrical progress has been the "strength of the gas interests." Again, foreign governments, appreciating the importance of conserving their home markets as a basis for the development of overseas trade, imposed protective duties and exerted influence on State Departments to purchase native goods. An industry cultivated under these and other encouraging conditions has had an immense advantage in international competition. There is, the committee says, conclusive evidence of the existence of German control over companies ostensibly British, and of that German control being exercised to the detriment of British interests indirectly through companies incorporated in America, Switzerland, and other neutral countries. "At the outbreak of war negotiations were in progress for the acquisition by Germany of financial control in existing companies of the United Kingdom, as well as in the British Dominions and India,

which if successfully concluded would have still further restricted the use of British goods in many parts of the empire."

The scientific replanning of our distribution of energy on which the committee so strongly insists would, it is calculated, effect a saving of no less than 50 million tons of coal per annum. Witnesses of high authority estimate the loss incurred by the nation through failure to take full advantage of electrical progress at quite £100,000,000 a year.

The larger part of the report is devoted to a careful and detailed examination, from sectional points of view, of the position of the industry. Section I. deals with electricity generation and transmission; Section II. with electrical traction; Section III. with manufacturing; Section IV. with the interdependence of manufacture and finance; and Section V. with imperial control of sources of electrical energy. Respecting the latter, it is suggested that, in particular, India and the self-governing Dominions should take stock of their facilities for generating electricity, whether from water-power, coal, oil, or other sources of energy, and should appreciate their permanent and ever-increasing importance to the empire.

THE DEPARTMENT OF CHEMISTRY OF THE COLLEGE OF THE CITY OF NEW YORK

THE following members of the staff of the department of chemistry have gone into war work:

1. In the service:
   - Captain Reston Stevenson, Sanitary Corps, Overseas.
   - Major F. E. Breithut, Chief Personnel Officer, Chemical Warfare Service.
   - Second Lieutenant Paul Gross, Research Division, Chemical Warfare Service.
   - Captain D. L. Williams, chief of supplies, Research Division, Chemical Warfare Service.
   - Second Lieutenant Martin Meyer, United States Army.
   - Corporal Howard Adler, Chemical Warfare Service.
   - Corporal Arthur W. Davidson, Chemical Warfare Service.
   - Ensign Benjamin Rayved, Paymaster Division.
   - Private Leon J. Smolen.
   - Private Nathan Rauch, Chemical Warfare Service.
   - Private Moses Chertcoff, Chemical Warfare Service.
   - Private F. L. Weber, Students' Army Training Corps.
   - Private Martin Kilpatrick, Chemical Warfare Service.
   - Private Hyman Storch, Chemical Warfare Service.
   - Joseph L. Guinane, Chemical Warfare Service.
   - Private Samuel Yachnowitz.
   - Yeoman Julius Leonard.
   - Yeoman Alexander Lehrman, Chemical Division.
2. In civilian capacity:
   - Professor H. R. Moody, War Industries Board.
   - Tutor B. G. Feinberg, Ordnance.
   - Fellow Paul Scherer, Ordnance.

The present staff is as follows:

Baskerville, Charles, professor and director of the Chemistry Building, emeritus.
Friedburg, L. H., associate professor of chemistry.
Curtman, Louis J., assistant professor, chief of the Division of Qualitative Chemistry.
Prager, William L., assistant professor, chief of the Division of Organic Chemistry.
Curtis, Robert W., assistant professor, chief of the Division of Quantitative Chemistry.
Estabrooke, William L., assistant professor, chief of the Division of the Evening and Summer Sessions.
Coles, Henry T., assistant professor of industrial chemistry.
Cooper, Herman C., assistant professor of physical chemistry.
McCrosky, Carl R., instructor.
LeCompte, T. R., instructor.
Brown, Stanley F., tutor.
Meltsner, Max, tutor.
Babor, Joseph A., tutor.

THE CHEMICAL WARFARE SERVICE

THE Chemical Warfare Service has been duly authorized by order of the Secretary of War, to make the necessary arrangements through the Adjutant General's Office to secure the furlough, without pay or allowances, of such chemists as are necessary in such government bureaus as the Bureau of Standards, Bureau of Chemistry, Bureau of Mines, United States Patent Office, where such chem-